

REMARKS

The 35 U.S.C. § 112 Rejections

The Examiner rejected claims 8-14 for allegedly being unclear how they further limit the structure of the claims from which they depend. The Applicant believes that one of ordinary skill in the art would have readily understand these claims, as originally written, as limiting the structure of the invention because they suggest a certain range of sizes, shapes, and substrate characteristics that this apparatus must be able to accommodate. Regardless, the Applicant has amended claims 8, 11 and 12 to specifically recite that the one or more applicator heads are adapted to pick up, convey and deposit the various parts specified in the claims, and has amended claims 9, 10, 13 and 14 to recite that the applicator heads are adapted to deposit the parts on the various targets specified in the claims. Each of these claims further limits its base claim by requiring the structure to be able to convey certain kinds of parts and/or deposit the parts onto certain kinds of targets. As such, the Applicant respectfully requests reconsideration and allowance of claims 8-14.

The 35 U.S.C. § 102 Rejections

The Examiner rejected claims 1-3, 6-14 and 26-29 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,726,876 to Tomsovic, Jr. ("Tomsovic"). The Applicant respectfully traverses and requests reconsideration of these rejections for at least the following reasons.

Claims 1 and 26

Regarding claims 1 and 26, the Examiner alleges that Tomsovic discloses "an apparatus for positioning articles. The apparatus includes an applicator, shoes, i.e. applicator heads, suitable gear, i.e. control device to control the rotation of the motor, and cam tracks and cam followers, which provide a control for the applicator heads to travel at the first speed to pick up parts and to travel at a second speed to deposit parts onto a target." Office Action, page 2, ¶ 5. However, the Applicant respectfully submits

that Tomsovic fails to teach two features of the present claims: (1) applicator heads that have *fixed-length arms*, and (2) a control device adapted to control the rotational speed of the motor.

Tomsovic discloses an apparatus in which "orbit transfer shoes" are mounted on "cam tracks" that are eccentric to the axis of rotation of the drum. The cam tracks cause the orbit transfer shoes to move in and out from the rotating axis of the hub to which it attached as the device rotates, as shown clearly in Tomsovic Figure 2. Tomsovic describes this operation as causing the orbit transfer shoes to move along a variable orbit radius:

The cams tracks may have any suitable eccentric configuration so as to provide a *different orbital radius* in each of the receiving zone RZ and discharge zone DZ of spacer means 20 so as to provide between adjacent transfer shoes 34 a desired orbital path distance PR in the receiving zone RZ and a desired (larger, in the illustrated embodiment) orbital path distance PD in discharge zone DZ.

Tomsovic, col. 6, ll. 56-63; *see also*, col. .

Tomsovic also discloses that its motor imparts *constant* radial speed to the drum, such that the orbit transfer shoes have a constant *radial* velocity. However, the orbit transfer shoes have a variable *linear* velocity that is caused by changing the cam arm length using the cam tracks:

Generally, rotation of spacer means 20 and 30 and of drums 18 and 40 is *preferably continuous rather than intermittent, and more preferably is continuous and of constant rotational velocity to avoid the necessity of accelerating and decelerating the apparatus*. Thus, the spacer means, or at least the drums 24 and 24' thereof preferably continuously rotate at constant rotational velocities. The linear velocity of the transfer shoes 34 and 34' along their respective orbital paths will of course vary directly with their orbital *radius*.

Tomsovic, col. 10, ll. 21-30. Here Tomsovic specifically teaches away from varying the speed of the device by accelerating and decelerating it, and instead relies on changing

the orbital radius of the orbit transfer shoes in order to obtained the desired increases and decreases in their linear velocity.

In direct contrast, the present invention claims an apparatus in which a variable speed motor and a motor control device impart a *variable* rotational velocity to the applicator, while *fixing* the radius of the applicator heads. Notably, the applicator heads of the claimed invention are mounted on rigid (i.e. fixed-length) arms that are connected to a hub: “[r]eferring back to Figures 1 and 2, an apparatus of the present invention may comprise an applicator 110 that is driven by a variable speed motor 124. The applicator 110 generally comprises a rotating structure having one or more applicator heads 118 that are attached to rotate on a pivoting hub 116. In the embodiment depicted in Figures 1 and 2, the applicator 110 comprises a pair of *rigid arms* 114 that join the hub 116 to the applicator heads. ” P. 13, l. 24 - p.14, l. 1 (emphasis added). Independent claims 1 and 26 have been amended to specifically recite that the applicator heads are located on *fixed-length arms*. Support for this amendment is found throughout the specification and specifically in the above-quoted language.

In the present invention, the arms are rigid, and therefore the applicator heads travel along a fixed radial path. As a consequence of the arms having a fixed radius, the speed of the applicator heads can not be changed by using the Tomsovic method of varying the length of the arms. Instead, the velocity of the applicator heads is varied by changing the rotational speed of the motor that drives the applicator. “The applicator 110 rotates such that the applicator heads 118 travel in a circular path, which is shown in the Figures as a broken line. The units 106 are supplied at a first location along the circular path (point A), deposited on the target web 102 or other target at a second location along the circular path (point B).” P. 20, ll. 3-6. “Each head of the applicator 110 picks up a unit 106 at point A, and is *accelerated* through an acceleration zone (marked as “ACC”) to the speed of the web 102. After depositing the unit 106 at point B, the applicator 110 is *decelerated* in a deceleration zone (marked as “DEC”) so that the speed of the second head 118 matches the speed of the supply feeder 112 as it passes

point A.” P. 20, ll. 15-19 (emphasis added). The specification discloses a method for controlling the motor speed (*i.e.*, accelerating and decelerating the motor) by using, for example, a CPU and one or more sensing devices. P. 16, l. 22 - p. 17, l. 26. Thus, the claimed invention achieves the task of multiple-web speed matching by a very different mechanism than is disclosed in Tomsovic. Not only does Tomsovic fail to teach the use of fixed-length arms to locate the applicator heads, as recited by the claims of the present invention, but Tomsovic also teaches away from varying the speed of the motor during the operation cycle, and therefore it would not be obvious to modify Tomsovic to have fixed-length arms.

Tomsovic also fails to teach or reasonably suggest the use of a control device to control the rotational speed of the motor. The “control device” in the present invention is adapted to control the speed of the motor (*i.e.*, accelerate it and decelerate it) such that it varies the rotational velocity of the hub during *each operation cycle*: “The motor 124 is preferably controlled so that the applicator 110 places each unit 106 at the desired location on the target web 102 or other target, requiring the movement of the applicator 110 to be coordinated with the movement of the target web 102.” P. 16, ll. 19-22.

“[T]he *angular velocity of the applicator 110 of the present invention may be varied so that the velocity of the applicator head 118 matches the unit velocity V_2 while picking up the units 106, and matches the target web velocity V_1 while depositing the units 106 on the target web 102.*”

P.14, ll. 25-28 (emphasis added). As the specification of the present invention makes clear, the function of “controlling” the rotational speed of the motor involves accelerating and decelerating the motor to similarly accelerate and decelerate the applicator heads during each rotation of the applicator. Claim 1 has been amended to more clearly recite that the control device operates to control the rotational speed of the motor, and support for this is provided throughout the specification, and particularly in the above-quoted language.

In contrast, Tomsovic fails to disclose any “control device” that can change the rotational speed of the Tomsovic device during each operating cycle. Indeed, Tomsovic

actually states that it is preferred to maintain a *constant* rotational speed: "Thus, the spacer means, or at least the drums 24 and 24' thereof preferably continuously rotate at constant rotational velocities. Tomsovic, col. 10, ll. 25-28. Although the Examiner alleges that Tomsovic discloses a "suitable gear" that the equivalent of a "control device to control the rotation of the motor" (Office Action, p. 2, last paragraph), Tomsovic does not show the use of a gear that can accelerate and decelerate the Tomsovic device to vary the speed during each rotation, as required by control device of the present invention.

In light of the foregoing remarks, the Applicant respectfully requests reconsideration and allowance of amended claims 1 and 26.

Claims 2 and 27

Regarding claims 2 and 27, the Examiner alleges that Tomsovic discloses "the apparatus has more than one applicator heads. (Col 6, lines 45-50 and Figure 2.)" Office Action, page 3, ¶ 1. Claims 2 and 27 depend from claims 1 and 26, respectively. As discussed above, the Applicant believes that claims 1 and 26 are not anticipated by Tomsovic. For at least these same reasons, the Applicant submits that claims 2 and 27 are also not anticipated by Tomsovic, and respectfully requests reconsideration and allowance of these claims.

Claim 3

Regarding claim 3, the Examiner alleges that Tomsovic discloses "the applicator head uses vacuum as a gripping device. (Col 8, lines 66-68)" Office Action, page 3, ¶ 2. Claim 3 depends from claim 1. As discussed above, the Applicant believes that claim 1 is not anticipated by Tomsovic. For at least these same reasons, the Applicant submits that claim 3 is also not anticipated by Tomsovic, and respectfully requests reconsideration and allowance of this claim.

Claims 6, 7, 28 and 29

Regarding claims 6, 7, 28 and 29, the Examiner alleges that Tomsovic discloses "the applicator's drive system includes motor and gearing, which is considered to be AC servomotor and AC servo drive. (Col 6, lines 38-45)" Office Action, page 3, ¶ 3. Claims 6 and 7 depend from claim 1, and claims 28 and 29 depend from claim 26. As discussed above, the Applicant believes that claims 1 and 26 are not anticipated by Tomsovic. Furthermore, as noted above, Tomsovic teaches away from varying the rotation speed of the Tomsovic apparatus during operation, and therefore it similarly teaches away from using variable-speed drive systems, such as AC servomotor and drive units, as the motor. For at least these reasons, the Applicant submits that claims 6, 7, 28 and 29 are also not anticipated by Tomsovic, and respectfully requests reconsideration and allowance of these claims.

Claims 8-14

Regarding claims 8-14, the Examiner alleges that Tomsovic discloses "the apparatus is for making absorbent article such as disposable diapers, training pants and incontinence garments (Col 1, lines 7-17) and is considered to be capable of transferring the parts such as absorbent core, absorbent core subassemblies, and grip tabs to targets such as absorbent core tissue layer and absorbent garment chassis layer." Office Action, page 3, ¶ 4. Claims 8 -14 depend (directly or indirectly) from claim 1. As discussed above, the Applicant believes that claim 1 is not anticipated by Tomsovic. For at least these same reasons, the Applicant submits that claims 8 - 14 are also not anticipated by Tomsovic, and respectfully requests reconsideration and allowance of these claims.

The 35 U.S.C. § 103 Rejections

The Examiner rejected claims 4, 5 and 15-23 under 35 U.S.C. § 103(a). The Applicant respectfully traverses and requests reconsideration of these rejections for at least the following reasons.

Claims 15-22

The Examiner rejected claims 15-22 (which generally relate to operational speeds of the claimed apparatus) as being unpatentable over Tomsovic as applied to claim 1 above. Claim 15 depends from claim 1 and claims 16-22 depend from claim 15. As discussed above, the Applicant believes that claim 1 is not anticipated by Tomsovic. For at least these same reasons, the Applicant submits that claims 15-22 are not unpatentable over Tomsovic, and respectfully requests reconsideration and allowance of these claims.

Claims 4 and 5

The Examiner rejected claims 4 and 5 as being unpatentable over Tomsovic as applied to claim 1 above, and further in view of U.S. Patent No. 5,850,771 to Killian ("Killian"). Claims 4 and 5 depend from claim 1. As discussed above, the Applicant believes that claim 1 is not anticipated by Tomsovic. Furthermore, regardless of whether Killian is properly combined with Tomsovic, the combination is not sufficient to cure the aforementioned defects of Tomsovic. Thus the Applicant submits that claims 15-22 are not unpatentable over Tomsovic in light of Killian, and respectfully requests reconsideration and allowance of these claims.

Claim 23

The Examiner rejected claim 23 as being unpatentable over Tomsovic as applied to claim 1 above, and further in view of U.S. Patent No. 5,177,841 to Hamuro *et al.* ("Hamuro"). Claim 23 depends from claim 1. As discussed above, the Applicant believes that claim 1 is not anticipated by Tomsovic. The Applicant also submits that Hamuro is not properly combined with Tomsovic because there is no motivation found in either reference to combine it with the other. A person of ordinary skill in the art would also not find any motivation or suggestion to combine the references because the structure and operation of the linear Hamuro device is very dissimilar to the structure and operation of the rotary Tomsovic device, and there is no expectation that the features of one can be successfully applied to the other. Furthermore, regardless of whether Hamuro is properly combined with Tomsovic, the combination is not sufficient

to cure the aforementioned defects of Tomsovic. Thus, for at least these reasons, the Applicant submits that claim 23 is not unpatentable over Tomsovic in light of Hamuro, and respectfully requests reconsideration and allowance of claim 23.

Claims 24 and 25

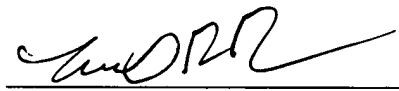
The Examiner rejected claims 24 and 25 as being unpatentable over Tomsovic as applied to claim 1 above, and further in view of U.S. Patent No. 4,758,293 to Samida ("Samida"). Claims 24 depends from claim 1 and claim 25 depends from claim 24. As discussed above, the Applicant believes that claim 1 is not anticipated by Tomsovic. Furthermore, regardless of whether Samida is properly combined with Tomsovic, the combination is not sufficient to cure the aforementioned defects of Tomsovic. Thus, for at least these reasons, the Applicant submits that claims 24 and 25 are not unpatentable over Tomsovic in light of Samida, and respectfully requests reconsideration and allowance of these claims.

CONCLUSION

For at least the reasons outlined above, the Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and allowance of the pending claims are respectfully solicited. Should there be anything further required to place the application in better condition for allowance, Examiner Chan is invited to contact the Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,
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